IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s):   Jouko TENHUNEN

WARNING: *37 C.F.R. § 1.41(a)(1) points out:*

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(i) is filed supplying or changing the name or names of the inventor or inventors."

For (title):   A METHOD AND A DEVICE FOR ERASING A NOTIFICATION MESSAGE

CERTIFICATION UNDER 37 C.F.R. § 1.10*
(Express Mail label number is mandatory.)
(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date __25 October 2000__, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number _EL627420215US_, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

June Adams

(type or print name of person mailing paper)

Signature of person mailing paper

WARNING: *Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.*

*WARNING: *Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).*
"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

1. Type of Application

This new application is for a(n)

(check one applicable item below)

☒ Original (nonprovisional)

☐ Design

    ☐ Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED and a NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION.

☐ Divisional.

☐ Continuation.

☐ Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(l) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICA-TION(S) CLAIMED.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

☐ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

__12__ Pages of specification

__3__ Pages of claims

__3__ Sheets of drawing

(complete the following, if applicable)

☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. § 1.84(b).

☐ formal

☐ informal

B. Other Papers Enclosed

__5__ Pages of declaration and power of attorney

__1__ Pages of abstract

_____ Other

4. Additional papers enclosed

☐ Amendment to claims

☐ Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)

☐ Preliminary Amendment

☒ Information Disclosure Statement (37 C.F.R. § 1.98)

☒ Form PTO–1449 (PTO/SB/08A and 08B)

☒ Citations

☐ Declaration of Biological Deposit

☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.

☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative

☐ Special Comments

☐ Other

5. Declaration or oath (including power of attorney)

NOTE: *A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).*

NOTE: *A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).*

☒ Enclosed

Executed by

(check all applicable boxes)

☒ Inventor(s).

☐ legal representative of inventor(s).
37 C.F.R. §§ 1.42 or 1.43.

☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.

☐ This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. *See* item 13 below for fee.

☐ Not Enclosed.

NOTE: *Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.*

☐ Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of *all* the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

☐ Showing that the filing is authorized.
(not required unless called into question. 37 C.F.R. § 1.41(d))

6. Inventorship Statement

WARNING: *If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.*

The inventorship for all the claims in this application are:

☐ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

    ☐ is submitted.

    ☐ will be submitted.

7. Language

NOTE: *An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of $130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).*

☒ English

☐ Non-English

    ☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

8. Assignment

☒ An assignment of the invention to __Nokia Mobile Phones Ltd.__

    ☒ is attached. A separate ☒ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

    ☐ will follow.

NOTE: *"If an assignment is submitted with a new application, send two separate letters-one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).*

WARNING: *A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.*

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9. Certified Copy.

Certified copy(ies) of application(s)

Country	Appln. No.	Filed
Finland	19992330	28 October 1999

Country	Appln. No.	Filed

Country	Appln. No.	Filed

from which priority is claimed

☒ is (are) attached.

☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)

A. ☒ Regular application

CLAIMS AS FILED			
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. § 1.16(a) $ 710.00
Total Claims (37 C.F.R. § 1.16(c)) 16 − 20 =	0	× $ 18.00	0
Independent Claims (37 C.F.R. § 1.16(b)) 2 − 3 =	0	× $ 80.00	0
Multiple dependent claim(s), if any (37 C.F.R. § 1.16(d))		+ $ 270.00	

☐ Amendment cancelling extra claims is enclosed.

☐ Amendment deleting multiple-dependencies is enclosed.

☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation $ 710.00

B. ☐ Design application
($ 320.00 −37 C.F.R. § 1.16(f))

Filing Fee Calculation $

C. ☐ Plant application
($ 490.00 −37 C.F.R. § 1.16(g))

Filing fee calculation $

11. Small Entity Statement(s)

☐ Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

WARNING: *"Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).*

WARNING: *"Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).*

(complete the following, if applicable)

☐ Status as a small entity was claimed in prior application

_____ / _____, filed on _____, from which benefit is being claimed for this application under:

35 U.S.C. § ☐ 119(e),
             ☐ 120,
             ☐ 121,
             ☐ 365(c),

and which status as a small entity is still proper and desired.

☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of **A, B** or **C** above)

$_____

NOTE: *Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 C.F.R. § 1.28(a).*

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time

☐ Not Enclosed

    ☐ No filing fee is to be paid at this time.
    (This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

☒ Enclosed

    ☒ Filing fee $ ___710.00___

    ☒ Recording assignment
    ($40.00; 37 C.F.R. § 1.21(h))
    (See attached "COVER SHEET FOR
    ASSIGNMENT ACCOMPANYING NEW
    APPLICATION".) $ ___40.00___

    ☐ Petition fee for filing by other than all the
    inventors or person on behalf of the inventor
    where inventor refused to sign or cannot be
    reached
    ($130.00; 37 C.F.R. §§ 1.47 and 1.17(l)) $ _____

    ☐ For processing an application with a
    specification in
    a non-English language
    ($130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k)) $ _____

    ☐ Processing and retention fee
    ($130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l)) $ _____

    ☐ Fee for international-type search report
    ($40.00; 37 C.F.R. § 1.21(e)) $ _____

NOTE: 37 C.F.R. § 1.21(l) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(l) must be paid, within 1 year from notification under § 53(f).

                Total fees enclosed $___750.00___

14. Method of Payment of Fees

    ☒ Check in the amount of $___750.00___

    ☐ Charge Account No. _____ In the amount of
    $_____
    A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should __not__ be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. __16-1350__ :

    ☒ 37 C.F.R. § 1.16(a), (f) or (g) (filing fees)

    ☒ 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

    ☒ 37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

    ☒ 37 C.F.R. § 1.17(a)(1)–(5) (extension fees pursuant to § 1.136(a)).

    ☒ 37 C.F.R. § 1.17 (application processing fees)

NOTE: ". . .A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

    ☐ 37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

16. Instructions as to Overpayment

NOTE: *". . . Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).*
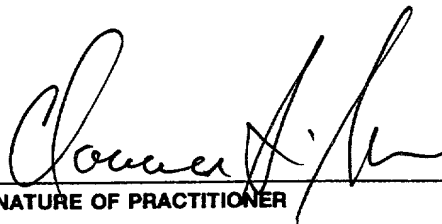
☒ Credit Account No. ___16-1350___

☐ Refund

SEND ALL CORRESPONDENCE TO:
Clarence A. Green, Reg. No.: 24,622
PERMAN & GREEN, LLP
425 Post Road
Fairfield, Connecticut 06430

Reg. No.   24,622

Tel. No. (203) 259-1800

Customer No. 2512

_____
SIGNATURE OF PRACTITIONER

Clarence A. Green
_____
(type or print name of attorney)

PERMAN & GREEN, LLP
_____
P.O. Address

425 Post Road, Fairfield, Connecticut 06430
_____

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☐ **Incorporation by reference of added pages**

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

☐ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

☒ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

☒ This transmittal ends with this page.

A METHOD AND A DEVICE FOR ERASING A NOTIFICATION MESSAGE

FIELD OF THE INVENTION

5

The present invention relates a Voice Mail System (VMS) and other corresponding systems where messages, such as voice messages, faxes and electronic mail messages can be stored for a recipient of a call or message who could not be reached. In particular, the invention relates to the erasure of the notification
10 message transmitted from a voice mail system to a recipient that was transmitted to a recipient who could not be reached, as a sign of the message stored in the system. Furthermore, the invention also relates quite generally to the erasure of notification messages in a terminal.

BACKGROUND OF THE INVENTION

15

Nowadays, it is possible to use in many telephone networks a so-called answering service. In this case, it is possible for a person calling to leave a short voice message to a recipient who cannot be reached at the moment the call is made.
20 For each user of an answering service, there exists in a memory of a voice mail system a voice mailbox of his own, wherein the voice messages intended for each user are stored. If the recipient of a call does not answer the call, a telephone operator or some other unit responsible for the maintenance of a voice mail system responsible for the switching of voice messages will answer the call;
25 request the caller to leave a voice message to the person he is trying to reach; receive the voice message dictated by the caller; and store it in a memory in a digital format in the voice mailbox of the person who could not be reached. When the person for whom the call directed to the voice mail system was intended, next time contacts the voice mail system, for example, with his mobile station, the
30 system will read from the memory the stored voice message and send it in an electronic format to the terminal of said person, such as to a mobile station of a cellular network, which will repeat the voice message transmitted in an electronic format as speech. Here, by the terminal is meant all terminals suitable for processing voice data, such as mobile stations, phones of a public switched
35 telephone network (PSTN), and computer terminals that are connected to a telephone network.

A voice mail system differs from a conventional telephone answering set in that the installations and functions of a voice mail system are centralised in a
40

telephone network, whereas a conventional telephone answering device is located decentralised in connection with a user's terminal.

5   Most voice mail systems VMS according to prior art (Figure 1) send a notification message to a person who could not be reached of the fact that a voice message has been left for the person in question in the voice mail system as is presented in the patent applications WO 98/46034 and EP 0 876 043 (A2). In addition to voice messages an SMS message sent to a mobile station, can be a notification of a fax

10   stored for the recipient in a network. Faxes sent to a recipient who could not be reached are typically stored in a fax mailbox corresponding to a voice mailbox, which can be integrated in connection with the voice mailbox so that both of these boxes even have the same telephone number. An SMS message sent to a mobile station can also be a notification of an electronic mail message or other

15   corresponding message stored for the recipient in a network. Electronic mail messages that come into question in connection with the present invention are typically stored in a network at a Remote Mail Server (RMS) from where a notification message as a sign of the storing of a new electronic mail message can be transmitted to a mobile station as a SMS message of a cellular network.

20   Hereinafter in the present description, a voice message will be used as an example of said messages stored for a user in a network.

If the question is of a voice mail system VMS located in a wireless cellular network 10, e.g. in a GSM network (Global System for Mobile Communications) a

25   notification of the existence of a voice message is typically transmitted through the short message service (SMS) of the cellular network 10. The notification of the fact that there is a voice message waiting in the voice mail system VMS for a recipient who could not be reached, is typically sent in this case by a mobile phone operator as an SMS message of the cellular radio network to the mobile

30   station MS of the recipient who could not be reached. In practice, in this case, the voice mail system VMS takes the initiative in transmitting the SMS message, but the transmission of the short message is effected through a short message service centre SM-SC of the network. Hereinafter in the present description, a GSM network will be used as an example of a cellular network comprising a voice

35   mail function.

A notification of a voice message that is waiting in a voice mail system is transmitted to a recipient who could not be reached always when a new voice message is stored in the voice mail system. More typically, always when a new

40   voice message is stored in the voice mail system, the information on the number

of new, not yet listened voice messages is sent to the recipient. Also the information on the total number of stored messages can be transmitted. After obtaining the notification, the recipient can contact the voice mail system by calling

5   the number of a voice mailbox of the voice mail system, in which voice mailbox the voice messages intended for the recipient are stored. After the establishment of the connection, the recipient may listen to the voice messages and carry out specific procedures to them, such as store or erase them.

10   If a plurality of voice messages are stored in a voice mailbox (the number can be, e.g. ten), an equal number of SMS messages were sent to a recipient who could not be reached, to a mobile station as a notification of the existence of the voice messages. These SMS messages (notification messages) will remain stored in the mobile station's memory until the recipient, i.e. the user of the mobile station

15   erases them from the memory manually one at a time. This is inconvenient and consumes a lot of the user's time.

In some advanced mobile stations, such as in a Nokia 6110 mobile station and in a Nokia 9110 Communicator mobile station, all ten SMS messages mentioned in

20   the previous chapter are not stored in different memory locations in the memory of a mobile station, but when a new SMS message as a sign of the existence of a new voice message arrives at the mobile station, an old message can be replaced by the new message. Typically, the number of new, not yet listened voice messages stored for the recipient appears from the content of the message. In

25   this case, instead of ten messages, the user only has to erase manually one SMS message. This means, however, additional trouble to the user of the mobile station.

In addition to a voice mail system and a remote mail server, notification messages

30   can also come to a terminal from other addresses. A plurality of notification messages can come, for example, from many different bearer services that a user has ordered. Thus, the erasure of many such notification messages from the memory of a mobile station is inconvenient and consumes a lot of the user's time.

35   SUMMARY OF THE INVENTION

Now, a method and a device have been invented for facilitating the use of a mobile station. According to one aspect of the invention, there is implemented a method for erasing a notification message in a terminal, which terminal

40   communicates with a network over a radio interface, which method comprises:

storing a specific first information in a specific system outside the terminal;
transmitting to the terminal over said radio interface a notification message as a
sign of said storing;

5   storing said notification message in a memory of the terminal.

It is characteristic of the method that it comprises:

contacting from the terminal a specific address for gaining access to said first
information;

erasing from the memory of the terminal said notification message in response to

10   a specific procedure relating to said contacting.

Said first information can be, for example, a voice message stored for a user in a
voice mail system; a fax stored in the user's fax mailbox; a multimedia message
stored in a multimedia messaging system; or an electronic mail message intended

15   for the user, stored in a remote mail server. Said first information can also be
some information relating to a bearer service ordered by the user, of the storing of
which information a notification message is sent to the user's terminal. In this
case, said first information is not necessarily only intended just for the user in
question. Said first information can be, for example, the information about the

20   changing of the URL (Uniform Resource Locator) of some page in the Internet
network of which there is a desire to inform the terminal. Said first information can
also be the information about a change in stock exchange prices, a delayed
airplane, an advertisement, a hit piece of music or a ringing tone stored in a
network server that can be retrieved into a terminal.

25

The address, which is contacted from the terminal for gaining access to said first
information can be, e.g. a telephone number, whereupon said contact, which can
be, e.g. a call or a data call is made by calling said number from the terminal, e.g.
for gaining access to a voice message, a fax or an electronic mail message. Said

30   address can also be some other address, e.g. URL, such as http://www.company-
xyz.com or some other IP (Internet Protocol) address by contacting of which
access is gained, e.g. with the help of WAP (Wireless Application Protocol) to a
network server where a new ringing tone, flight schedules or stock exchange
quotations are maintained or stored.

35

The contact that is made from the terminal to said address can be a circuit or
packet switched connection. In connection with the present description, by contact
is meant contact that can be implemented either as connection oriented or
connectionless service. In connection oriented contacting, first a given connection

40   link is established between the communicating parties before actual data

transmission can be effected. In connectionless contacting, no connection link need to be established, but data transmission can be effected immediately. An example of this is the SMS message of a GSM network.

5

By the procedure relating to contacting in response to which a notification message is erased, is meant, for example, the initiation of contacting, the establishment of contact or disconnecting an established contact. If there are in the memory of the terminal more than one notification messages arrived from the

10 system in question, all such notification messages will be erased in response to a procedure relating to said contacting.

According to a second aspect of the invention, there is implemented a terminal, which is arranged to communicate with a network over a radio interface and which

15 terminal comprises means for receiving a notification message transmitted to the terminal over said radio interface and for storing it in a memory of the terminal, which notification message is a notification of a first information stored in a system outside the terminal.
It is characteristic of the terminal that it comprises:

20 means for contacting a specific address for gaining access to said first information;
means for erasing said notification message from the memory of the terminal in response to a specific procedure relating to said contacting.

25 According to one preferred embodiment of the invention, a terminal which can be, for example, a mobile station of a cellular network or a computer terminal that is connected to a telecommunication network (telephone network) over a radio interface (e.g. through the mobile station of the cellular network), checks when a call is made from the terminal whether the call is made (whether contact is made)

30 to a number, which makes the call connect to a system outside the terminal, wherein specific messages, such as voice messages, video recording messages or other multimedia messages, faxes or electronic mail messages intended for the user are being stored. If this happens, the notification messages that were transmitted from the system outside the terminal as, e.g. an SMS message or a

35 WAP message to the terminal as a notification of the existence of said specific messages will be automatically erased from the terminal's memory by which here is meant a memory that is in the use of the terminal. By the system outside the terminal is meant here, e.g. a voice mail system, a video recording message system or a multimedia messaging system, a remote mail server, a fax mailbox

40

service or other corresponding system or network server, wherein some content is stored in an electronic format, whereto the terminal can gain access.

5

BRIEF DESCRIPTION OF THE DRAWINGS

In the following, the invention will be described in detail by referring to the enclosed drawing, in which

10

Figure 1   shows a voice mail system according to prior art in a mobile communication network;

Figure 2   is a flow diagram that shows the basic idea of the invention

15   relating to a preferred embodiment of the invention;

Figure 3   is a flow diagram that shows an alternative decision-making method according to the invention;

20   Figure 4   illustrates essential parts of a mobile station that implements a method according to the invention.

DETAILED DESCRIPTION

25   Figure 1 was described above in connection with the description of prior art. Figure 2a is a flow diagram that shows the basic idea of a method according to the invention relating to one preferred embodiment of the invention. In the first phase of the method, a voice mail system stores a voice message for a recipient who could not be reached (Block 20). A notification of this is transmitted to a mobile

30   station of the recipient who could not be reached (Block 21). The mobile station stores the SMS message in its memory (Block 22). The memory used can be located in the mobile station itself, in a SIM card (Subscriber Identity Module) or in some other separate memory means, such as in a MultiMedia Memory Card (MMMC). When a call is made from the mobile station next time (Block 23), the

35   mobile station will check if the call is made to a personal voice mailbox of the user of the mobile station (Block 24a). If this is not the case, it will be moved back to Block 23. If again the call is made to the user's personal voice mailbox, the mobile station will search among the SMS messages stored in the memory for those that originate from the voice mail system (Block 25) and erase them (Block 26).

40   Alternatively, as is shown in Figure 3, the SMS messages that originate from the

voice mailbox can be erased only after the voice mail system has answered the user's call. In this case, it will be moved from Block 24a to Block 24b, where the mobile station checks whether the voice mail system answers the call. If the voice

5 mail system does not answer the call, it will be moved back to Block 23, and the SMS messages are not erased. If the voice mail system answers, the mobile station will search among the SMS messages stored in the memory for those that originate from the voice mail system (25) and erase them (Block 26).

10 The number of the personal mailbox of the user of the mobile station can be stored in the mobile station either in the memory of the SIM card or in the memory of the mobile station. Typically, the storing is carried out by the user of the mobile station in connection with the commissioning of the mobile station. If the number of the voice mailbox stored in the memory is correct, the same number also shows

15 as the number of the sender in the SMS message that is transmitted on the initiative of the voice mail system to the mobile station as a notification of a voice message waiting in the voice mail system. More accurately, the number of the voice mailbox shows in the transmitted SMS message as a so-called Calling Line Identity (CLI). The number data can also be added to the user data of the SMS

20 message. In this case, the content of the user data can be, for example: "1 message. Call +358421234567", where the series of numbers is the number of the user's voice mailbox. Typically, the initiative in transmitting the SMS message is taken by the voice mail system VMS. Typically, the SMS message is switched to the mobile station through the short message service centre of the network.

25

In order to illustrate a first preferred embodiment of the invention, it is assumed that the user of a mobile station has been at a meeting that has lasted for four hours during which time he has been unable to answer his mobile phone. It is further assumed that during this time a plurality of calls have come to his mobile

30 phone, which have been directed to a voice mail system. It is still further assumed that as a result of the unanswered calls directed to the voice mail system, four voice messages have been stored in the personal voice mailbox of the user of the mobile phone. As a notification of this, four SMS messages have typically been sent to the user's mobile station, in which messages the calling line identity is the

35 number of the user's voice mailbox. It should be noted here that said notification to the mobile station can also be transmitted as a WAP message or other corresponding message, such as a message over a packet switched connection (e.g. in GPRS service (General Packet Radio Service)).

40

When the user of the mobile station begins to use his mobile station after the meeting, he notices the SMS messages sent on the initiative of the voice mailbox. When he wants to listen to his voice messages stored in the voice mailbox, the

5   user of the mobile station contacts his voice mailbox by calling the number of his voice mailbox. Selecting the number of the voice mailbox can be effected, for example, by keying in the number manually with the mobile station's numeric keypad or by pressing the shortcut key of the mobile station on which the number is stored, by selecting the number from the mobile station's menu facilities or by

10   picking up the number from a SMS message by the function "Pick up Number". Correspondingly, when wanting to gain access to the faxes stored in a fax mailbox that corresponds to a voice mailbox, for a user who could not be reached, the user typically calls the number of his fax mailbox. Whereas the retrieving of electronic mail messages stored for a user in a remote mail server or a video recording

15   message system may be effected using a circuit or packet switched connection.

According to the invention, a mobile station comprises means for identifying calls that terminate at a user's personal voice mailbox. Calls made to a voice mailbox are identified by comparing always when calling from the mobile station, the

20   number to which the call is made to the number of the user's personal voice mailbox stored in the memory of the mobile station (or in the memory of the SIM card). Typically, comparing is carried out by a specific process in a computer program run in the mobile station.

25   In some mobile communication networks, a user can contact this personal voice mailbox by calling a specific number, which is the same irrespective of the user. For example, in the GSM network of Radiolinja in Finland, a user contacts his own voice mailbox (answering service) from his own mobile station by dialling the number 777. Typically, the network uses here the CLI data for identifying the user

30   and redirects the call dialled to the number 777 to the personal voice mailbox of the user.

In order that a call terminating at a voice mail system could be identified, a user may according to the invention also input menu controlled other numbers of a

35   voice mailbox than said voice mailbox number mentioned in the previous chapter, through the user interface of a mobile station into the mobile station's memory. Also these numbers are always compared when making a call from the mobile station to the number called for identifying the calls terminating at the user's voice mailbox. Hence, here all telephone numbers by calling of which a call will

40

terminate at a user's personal voice mailbox are understood as numbers of the voice mailbox.

5   If the number called is the same as one of the numbers of the voice mailbox mentioned above, the mobile station concludes that the call will terminate at the user's personal voice mailbox. This conclusion the mobile station makes so that it interprets that the call will terminate at the user's personal voice mailbox irrespective of whether the call is made with or without a country code (e.g.

10   Finland +358). Thus, for example, when making a call within the Finnish borders both to the number +358 50 123456 (with the country code) and when calling 050 123456 (without the country code), the call is interpreted to terminate at the user's personal voice mailbox irrespective of which number is stored in the mobile station as the number of the voice mailbox (assuming, of course, that the number is

15   question really is the number of the user's voice mailbox). After this, the short messages transmitted to the mobile station on the initiative of the voice mail system are identified by comparing the CLI data of the SMS messages to the numbers of the voice mailbox stored in the mobile station. After the identification phase, the identified SMS messages that were transmitted to the mobile station

20   on the initiative of the voice mail system as a sign of the existing voice messages, are erased from the memory of the mobile station.

Alternatively, the SMS messages originating from the voice mailbox can be erased only after the voice mail system (user's own voice mailbox) has answered the

25   user's call. The mobile station knows that the voice mail system has answered the call if it receives a specific answer message in signalling between the network and the mobile station. In this case, the SMS messages can be erased after the arrival of said specific answer message. According to the invention, it is also possible to erase the SMS messages in response to disconnecting the call (contact).

30

If the number which is called with the mobile station is not the number by calling of which the call will terminate at the user's voice mailbox, the erasing procedures of SMS messages will not be carried out.

35   Depending on the mobile communication network and the operator, however, CLI data is not always delivered along with a SMS message. This being the case, the identification of the short messages transmitted to a mobile station on the initiative of a voice mail system will not succeed merely by comparing the CLI data. However, often the user data of a SMS message, which can be, for example, 160

40   characters long, comprises such data from which it can be concluded that the

short message originates from a voice mail system. Such data can be, for example, the number of a voice mailbox or some other details relating to the structure of the text comprised by the short message.

5

In a second preferred embodiment according to the invention, in order to facilitate the identification of short messages originating from a voice mail system, there is provided means for a user of a mobile station for creating a file of his own in the memory of the mobile station. The user may input menu controlled into the
10 memory of the mobile station, through the user interface of the mobile station, a specific type of reference file.

This file should be as identical as possible in structure to the operator-specific content of the user data of a SMS message transmitted from a voice mail system
15 as a sign of the existence of voice messages. In this case, when comparing the content of said reference file to the content of short messages sent to the mobile station, the SMS messages transmitted on the initiative of a voice mail system can be identified as well as possible. For instance, if a user of a mobile station uses the answering service of the Finnish Radiolinja, the content of the reference file
20 can be, for example, as follows:

Message to Pro Box %d clo %t. Voice:%v & Fax:%f. Call %p ,

where "Message to Pro Box" is an operator-specific standard text for a SMS
25 message transmitted on the initiative of a voice mail system; %d is the leaving date of the message; %t is the leaving time of the message; %v is the number of voice messages stored in the system; %f is the number of faxes stored in the system; and %p is the telephone number of the user's voice mailbox.

30 Now, in case it has been impossible to define the notification messages originating from a voice mail system with the means presented in connection with the first embodiment of the invention, of the SMS messages stored in the mobile station the messages that originate from a voice mail system can be identified by comparing specific points in the content of their user data to the content of the
35 reference file. For example, it is possible to compare the text "Message to Pro Box"; the words "clo", "Voice", "Fax", "Call"; and the voice mailbox number %p. In the comparison, the "Pick up Number" function can be utilised.

Correspondingly, a reference file which can be used for the identification of an
40 operator-specific notification message, which notification message is transmitted

as a sign of the storing of a new mobile station ringing tone stored in a specific network server, can be of the format:

5   New Ringing Tone: Name% URL% ,

where Name% is the name of the new ringing tone and URL% is the URL from which the new ringing tone can be retrieved. When comparing the content of the reference file to the actual notification message, it is possible to make use of the

10   "Pick up URL" function which is known, e.g. from a Nokia 9110 Communicator mobile station.

According to the invention, a user is also provided with means for modifying said reference file. This may be necessary if the network operator changes the basic

15   structure of the user data of the above-mentioned SMS message sent from a voice mail system as a sign of the existence of voice messages.

An SMS message comprises in its message structure, in addition to user data, also so-called control bits. In connection with GSM, there is known a control bit

20   pattern (for example, "000 0000") in the message structure of an SMS message from which a mobile station can determine that the SMS message arrived at the mobile station is a notification originating from a voice mail system, of a voice message stored for a recipient in the voice mail system. Therefore, in a third embodiment according to the invention, the control bit pattern presented above is

25   preferably used in the identification of SMS messages originating from a voice mail system. This being the case, always when the user calls successfully his voice mailbox, the mobile station erases from the mobile station's memory the SMS messages that have the above-mentioned control bit pattern in their message structure.

30

The invention can be implemented programmably. The computer program in question can be stored in a data medium, for example, in a memory; it can be transferred; and it can be run, e.g. in a computer or a microprocessor of a mobile phone.

35

The advantage gained with the arrangement according to the invention is that in addition to programmable changes made in a mobile station, there is no need to make changes in a cellular network, a voice mail system, interfaces and signalling, for implementing the invention.

40

Figure 4 illustrates parts essential for the operation of a mobile station (MS) that implements a method according to the invention. The mobile station MS comprises a processor MPU and parts functionally connected to the processor: a
5   memory MEM; a user interface UI; and a radio part RF. The processor MPU is preferably a microprocessor, -controller or a digital signal processor (DSP). The memory MEM preferably comprises a non-volatile memory (ROM, read only memory) and a random access memory (RAM). The radio part RF can transmit and receive radio frequency signals with its antenna AER. The user interface UI
10   preferably provides a user with a display and a keypad for using the mobile station MS. Typically, the software of the mobile station MS is stored in the non-volatile memory. The processor MPU controls on the basis of the software, the operation of the mobile station MS, such as the use of the radio part RF; the presentation of messages with the user interface UI; and the reading of inputs received from the
15   user interface UI. The processor MPU uses the random access memory as a buffer memory when processing data. In the mobile station, a method according to the invention (e.g. comparing telephone numbers and erasing SMS messages) is substantially implemented by the processor MPU on the basis of the program making use of the memory MEM.
20

This paper presents the implementation and embodiments of the present invention with the help of examples. A person skilled in the art will appreciate that the present invention is not restricted to details of the embodiments presented above, and that the invention can also be implemented in another form without
25   deviating from the characteristics of the invention. The embodiments presented above should be considered illustrative, but not restricting. Thus, the possibilities of implementing and using the invention are only restricted by the enclosed claims. Consequently, the various options of implementing the invention as determined by the claims, including the equivalent implementations, also belong to
30   the scope of the invention.

CLAIMS

1.   A method for erasing a notification message in a terminal, which terminal communicates with a network over a radio interface, which method comprises:

5   storing a specific first information in a specific system outside the terminal;

transmitting to the terminal over said radio interface a notification message as a sign of said storing;

storing said notification message in a memory of the terminal, wherein the method comprises:

10   contacting from the terminal a specific address for gaining access to said first information;

erasing from the memory of the terminal said notification message in response to a specific procedure relating to said contacting.

15   2.   A method according to claim 1, wherein said first information to which information said terminal gains access is stored in the specific system outside the terminal, for said terminal.

3.   A method according to claim 1, wherein said first information is a message
20   intended for the terminal, which is stored for the terminal in an electronic format in the specific system outside the terminal.

4.   A method according to claim 3, wherein said message intended for the terminal is one of the following: voice message; video recording message;
25   multimedia message; fax; electronic mail message.

5.   A method according to claim 1, wherein said specific procedure in response to which said notification message is erased, is one of the following: initiation of contacting said specific address; establishment of contact; disconnecting.

30
6.   A method according to claim 1, wherein the method comprises:

storing in the memory of the terminal said specific address by contacting of which contact is made to said system outside the terminal;

checking in the terminal when contact is made from the terminal, whether
35   the address which is contacted is said specific address, by comparing the address which is contacted to said specific address stored in the terminal;

if the address which is contacted is said specific address, identifying from among the messages stored in the memory of the terminal the notification messages that originate from said system outside the terminal and erasing the
40   identified notification messages.

7.   A method according to claim 1, wherein contacting from the terminal said specific address for gaining access to said first information is effected by making a call from the terminal to a specific number; and

5   erasing the notification message is effected in response to one of the following procedures: making a call to said specific number; said specific system outside the terminal answering the call; terminating off said call.

8. A method according to claim 7, wherein the method comprises:

10   storing in the memory of the terminal said specific number by calling of which the call will connect to said system outside the terminal;

          checking when making a call from the terminal, whether the number which is called is said specific number by comparing the number which is called to said specific number stored in the terminal;

15   if the number which is called is said specific number, identifying from among the messages stored in the memory of the terminal the notification messages that originate from said system outside the terminal, and erasing the identified notification messages.

20   9.   A method according to claim 8, wherein there are at least two said specific numbers by calling of which the call will connect to said system outside the terminal.

10.   A method according to claim 8, wherein said identification of notification

25   messages is carried out by comparing the CLI data (Calling Line Identity) of the messages stored in the memory of the terminal to said specific number stored in the terminal.

11.   A method according to claim 8, wherein the method comprises:

30   storing in advance in the memory of the terminal a reference file, which is for its essential parts identical to said notification message stored in the memory of the terminal;

          said identification of notification messages is carried out by comparing the content of the messages stored in the memory of the terminal to the content of

35   said reference message.

12.   A method according to claim 1, wherein said notification message transmitted to and stored in the terminal comprises a message structure and in its message structure, a control bit pattern, which control bit pattern is used for

40   identifying notification messages originating from the system outside the terminal.

13.   A method according to claim 1, wherein said system outside the terminal is one of the following: voice mail system; video recording message system; multimedia messaging system; fax mailbox service; remove mail service.

14.   A method according to claim 1, wherein said notification message is one of the following: SMS message; WAP message; message according a packet switched protocol.

15.   A method according to claim 1, wherein said terminal is one of the following: telephone of a cellular network; computer terminal.

16.   A terminal (MS), which is arranged to communicate with a network over a radio interface and which terminal (MS) comprises means (MPU, RF, AER) for receiving a notification message transmitted to the terminal (MS) over said radio interface and for storing it in a memory (MEM) of the terminal, which notification message is a notification of a first information stored in a system (VMS) outside the terminal, wherein the terminal comprises:
       means (UI, MPU, MEM, RF, AER) for contacting a specific address for gaining access to said first information;
       means (MPU) for erasing said notification message from the memory (MEM) of the terminal in response to a specific procedure relating to said contacting.

ABSTRACT

The object of the invention is a method for erasing a notification message in a terminal, which terminal communicates with a network over a radio interface. The method comprises storing a specific first information in a system outside the terminal, and transmitting a notification message to the terminal over said radio interface as a sign of said storing. Said notification message is stored in a memory of the terminal. The method comprises contacting from the terminal a specific address for gaining access to said first information and erasing said notification message from the memory of the terminal in response to a specific procedure relating to said contacting. The object of the invention is also a terminal, which implements a method according to the invention.
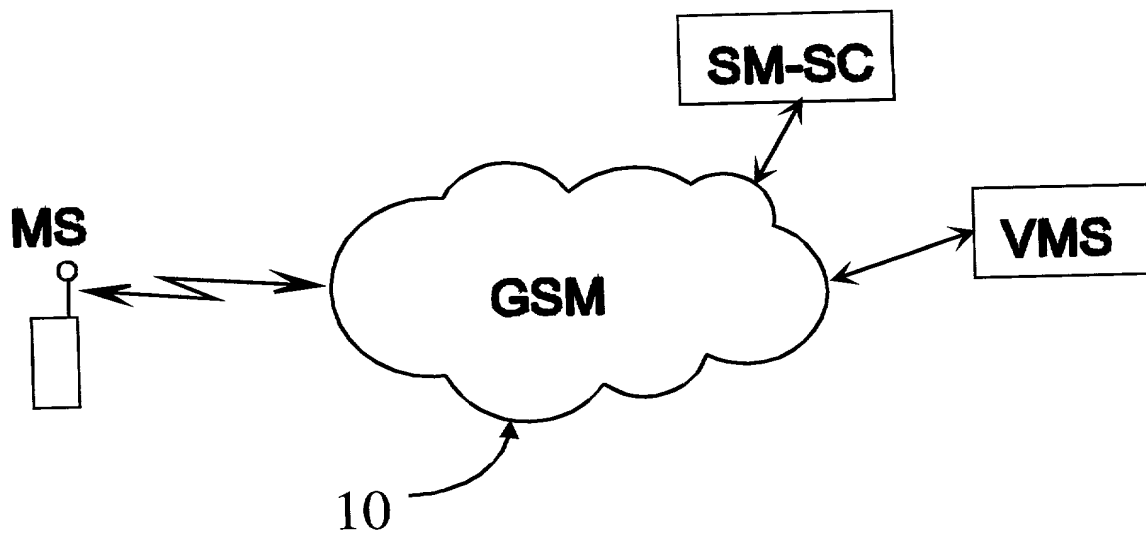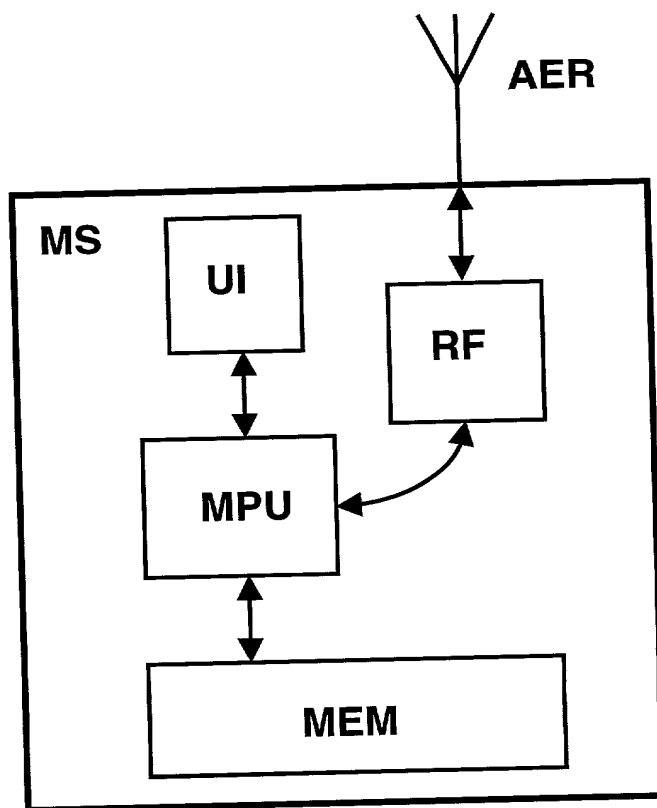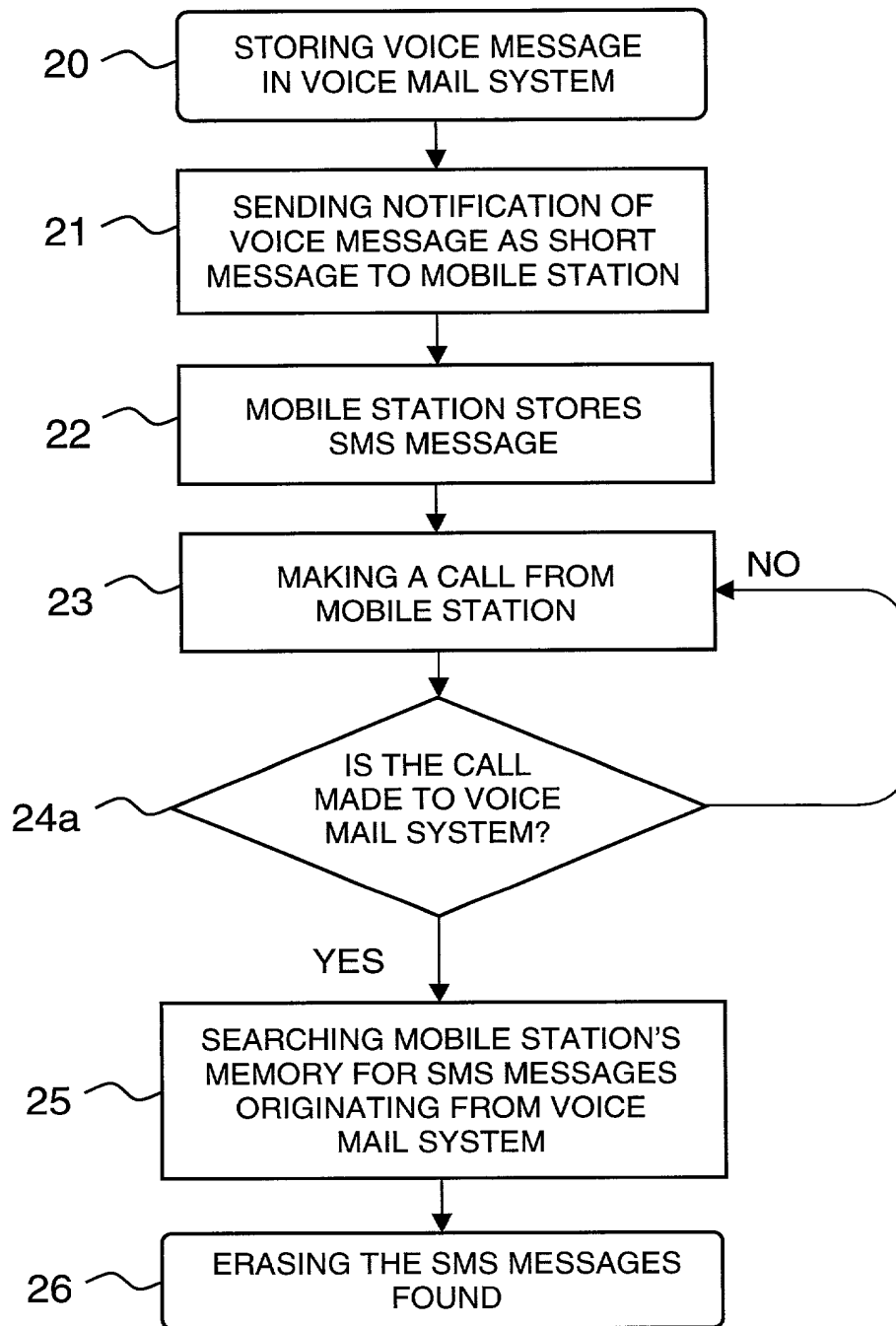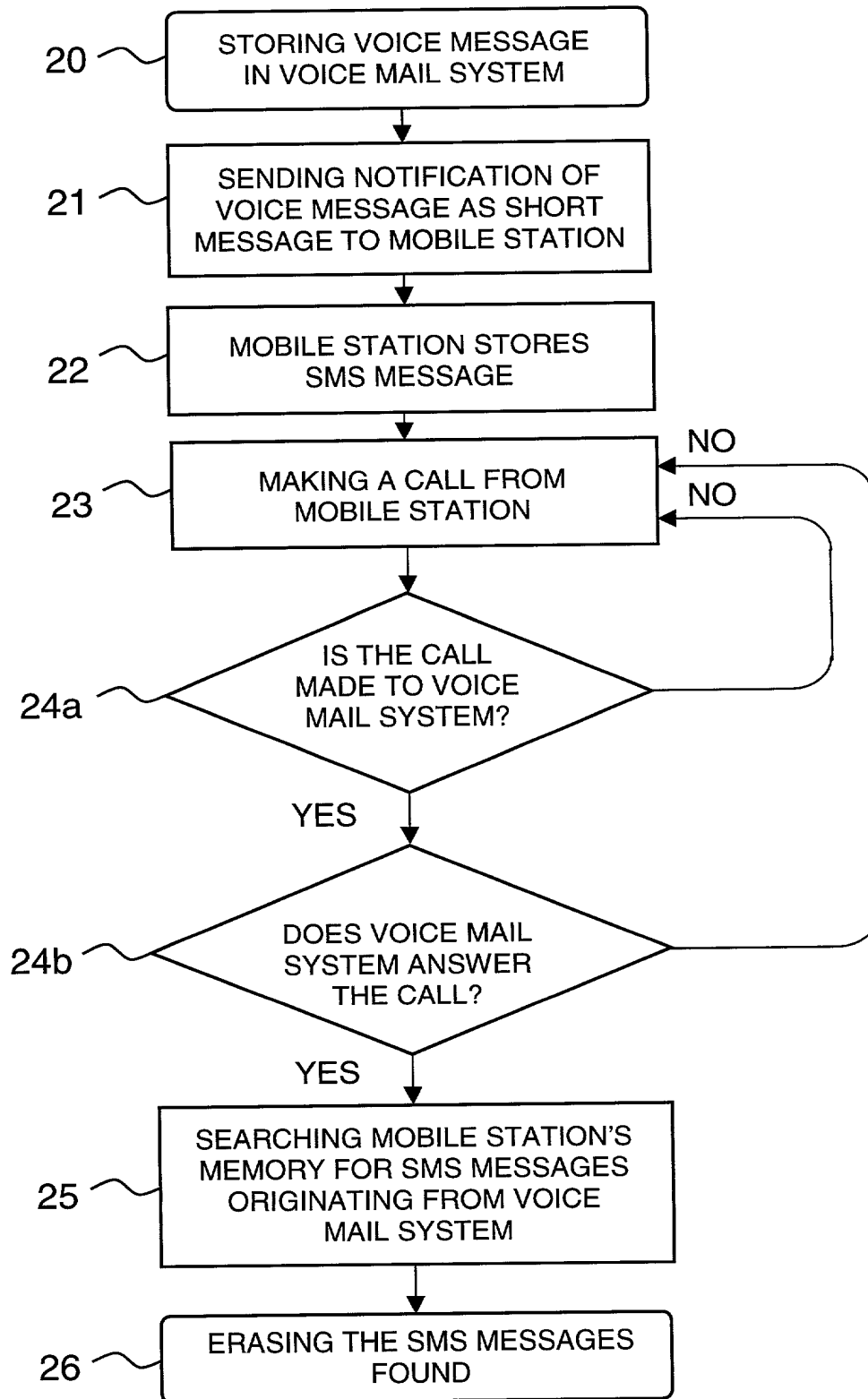
Figure 2.

Fig. 1
PRIOR ART

Fig. 4

20 — STORING VOICE MESSAGE IN VOICE MAIL SYSTEM

21 — SENDING NOTIFICATION OF VOICE MESSAGE AS SHORT MESSAGE TO MOBILE STATION

22 — MOBILE STATION STORES SMS MESSAGE

23 — MAKING A CALL FROM MOBILE STATION

NO

24a — IS THE CALL MADE TO VOICE MAIL SYSTEM?

YES

25 — SEARCHING MOBILE STATION'S MEMORY FOR SMS MESSAGES ORIGINATING FROM VOICE MAIL SYSTEM

26 — ERASING THE SMS MESSAGES FOUND

Fig. 2

Fig. 3

Attorney's Docket No. _____   **PATENT**

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

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This declaration is of the following type: (check one applicable item below)

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      ☐ national stage of PCT

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      ☐ divisional
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      ☐ continuation-in-part (C-I-P)

INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

A Method and a Device for Erasing a Notification Message

SPECIFICATION IDENTIFICATION

the specification of which: (complete (a), (b) or (c))

(a) ☒ is attached hereto.
(b) ☐ was filed on _____ as ☐ Serial No. 0   /
    or ☐ Express Mail No., as Serial No. not yet known
    and was amended on _____(if applicable)

(c) ☐ was described and claimed in PCT International Application No.
_____ filed on _____ and as
amended under PCT Article 19 on _____ (*if any*).

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information
☒ which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56
(also check the following items, if desired)

☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent, and
☐ In compliance with this duty there is attached an information disclosure statement in accordance with 37 CFR 1.98.

PRIORITY CLAIM (35 U.S.C. § 119)

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT International application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT International application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) ☐ no such applications have been filed.

(e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

A. PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS

(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, **month**, year)	PRIORITY CLAIMED UNDER 37 USC 119	
Finland	**19992330**	**28.10.1999**	☒ YES	NO☐
			☐ YES	NO☐
			☐ YES	NO☐
			☐ YES	NO☐
			☐ YES	NO☐

ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS
(6) MONTHS FOR DESIGN PRIOR TO THIS U.S. APPLICATION

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POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*

        Clarence A. Green (24,622)
        Harry F. Smith (32,493)
        Mark F. Harrington (31,686)

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☐   Attached as part of this declaration and power of attorney is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO	DIRECT TELEPHONE CALLS TO: *(Name and telephone number)*
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DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Jouko   TENHUNEN
(GIVEN NAME)   (MIDDLE INITIAL OR NAME)   FAMILY (OR LAST NAME)

Inventor's signature _____
Date _____16th October 2000_____ Country of Citizenship   Finland
Residence   Helsinki, Finland
Post Office Address   Punavuorenkatu 21 A 10, FIN-00150 Helsinki

Full name of second joint inventor, if any

_____   _____
(GIVEN NAME)   (MIDDLE INITIAL OR NAME)   FAMILY (OR LAST NAME)

Inventor's signature _____
Date _____ Country of Citizenship
Residence
Post Office Address

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Full name of third joint inventor, if any

‾‾‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾
(GIVEN NAME)   (MIDDLE INITIAL OR NAME)   FAMILY (OR LAST NAME)

Inventor's signature _____
Date _____ Country of Citizenship
Residence
Post Office Address

CHECK PROPER BOX(ES) FOR ANY OF THE FOLLOWING ADDED PAGE(S) WHICH FORM A PART OF THIS DECLARATION

☐   Signature for fourth and subsequent joint inventors. *Number of pages added*

• • •

☐   Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added*

• • •

☐   Signature for inventor who refuses to sign or cannot be reached by person authorised under 37 CFR 1.47. *Number of pages added*

• • •

☐   Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time (37 CFR 1.47).

• • •

☐   Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.
             ☐ Number of pages added

• • •

☐   Authorization of attorney(s) to accept and follow instructions from representative.

• • •

(If no further pages form a part of this Declaration, then end this Declaration with this page and check the following item:)

☒ This declaration ends with this page.

(Declaration and Power of Attorney [1-1]-page 5 of 5)